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A SECOND COLLECTION OF BATS FROM THE  
ISLAND OF CURAÇAO.\*

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Mr. Leon J. Guthrie, United States Weather Observer at Willemstad, Curaçao, West Indies, has recently sent to the United States National Museum a second collection of bats preserved in formalin.† Three species are added to the known fauna of the island, though two of those previously obtained, *Myotis nesopolus* and *Leptonycteris curasoae*, are not represented. The number of bats recorded from Curaçao is thus raised to six, all of which are so far as known peculiar to the island.

*Glossophaga elongata* Miller.

Twenty-seven specimens, taken from caves and rock fissures in different parts of the island, but chiefly from a large cave at Hatto, a country estate about thirty miles from Willemstad. Among the fifty-six individuals of this species examined four have the incisors noticeably defective, while in only one of these are the teeth absent. This condition is in marked contrast with that recently observed by Dr. J. A. Allen in a series of thirty-four specimens of the closely allied *Glossophaga longi-*

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†For account of the first collection, see Proc. Biol. Soc. Washington, xiii, pp. 123-127, April 6, 1900.

*rostris* of Colombia. Here the incisors were absent in about one-third of the individuals, and the full set was present in less than one-half.\*

*Mormoops intermedia* sp. nov.

*Type* adult female (in alcohol) No. 102,174 United States National Museum, collected in cave at Hatto, on north coast of Curaçao, West Indies, April 29, 1900.

*Characters*.—Similar to the Mexican *Mormoops megalophylla* Peters, but smaller, the size intermediate between that of the two previously known species; color (at least in brown phase) slightly darker than in *M. megalophylla*.

*Color*.—Brown phase: entire dorsal surface sepia, the fur paler beneath the surface, and each hair tipped with light drab. The drab tips produce a distinct 'bloom' in certain lights. Underparts very pale yellowish broccoli-brown, lightest on belly, flanks and pubic region, faintly darker across chest. Red phase: like brown phase but entire pelage suffused with cinnamon. Pale phase: light salmon-buff above and below, becoming more red about shoulders and head. Ears and membranes dark brown in all three color phases. Individuals in the brown phase are the most frequent; those in the red phase are less often met with; while the pale phase is comparatively rare.

*Membranes, ears, and other external characters* as in *Mormoops megalophylla*.

*Skull and teeth*.—While the skull exactly resembles that of *Mormoops megalophylla* the teeth are distinguishable by the greater size and consequent crowding of the upper premolars. The anterior premolar is distinctly broader than in *M. megalophylla* and it usually fills the entire space between canine and posterior premolar. The lower premolars are slightly larger than in the Mexican animal.

*Measurements*.—External measurements of type specimen: total length, 80; tail, 20; tibia, 20; foot, 9; calcar, 20; forearm, 48; thumb, 6.4; second digit, 45; third digit, 90; fourth digit, 6.6; fifth digit, 57; ear from meatus, 14; ear from crown, 9. Average of twenty topotypes: tail, 20.9 (18-22); forearm, 49.6 (48-51).†

*Specimens examined*.—One hundred and sixty-four from caves and rock crevices in all parts of the island.

*Remarks*.—*Mormoops intermedia* is readily distinguishable from *M. megalophylla* by its size and more crowded upper premolars. With the Jamaican *M. blainvillii* it needs no comparison. The color phases in this bat are very striking.

*Natalus tumidirostris* sp. nov.

*Type* adult male (in alcohol) No. 102,106 United States National Museum, collected in cave at Hatto, on north side of island of Curaçao, West Indies, May 1, 1900.

\*Bull. Am. Mus. Nat. Hist., N. Y., xiii, p. 89, May 12, 1900.

†Average of twenty specimens of *M. megalophylla* from Mirador, Vera Cruz, Mexico; tail, 27.8 (26-32); forearm, 54 (53-57).

*Characters*.—Externally similar to Mexican specimens of *Natalus stramineus* Gray, but fingers shorter and ears somewhat more pointed. Skull with braincase more abruptly elevated than in the Mexican species, and *rostrum conspicuously inflated at sides*. Teeth throughout larger than in *N. stramineus*, the lower premolars noticeably broadened.

*Color*.—Dorsal surface uniform cream-buff, the tips of the hairs gradually darkening to pale drab; belly similar, but the buff slightly more tinged with yellow and the drab less apparent. Ears and membranes light brown.

*Ears*.—The ear is essentially as in *N. stramineus*,<sup>2</sup> but the point is distinctly longer and narrower.

*Membranes, feet*, and other external characters as in *N. stramineus*.

*Skull*.—Though in general appearance, the skull of *Natalus tumidirostris* resembles that of *N. stramineus* it is immediately distinguishable by the conspicuously swollen sides of the rostrum. The inflation involves the maxillary bones from anterior edge of orbit almost to nares, and from near edge of toothrow to nasals. As the nasals retain the normal form they appear to occupy the floor of a broad, shallow, longitudinal groove. In the type the braincase rises above the dorsal plane of the rostrum at an angle of  $50^{\circ}$ , in a second specimen at an angle of  $58^{\circ}$ . In two specimens of *N. stramineus* the angle is respectively  $34^{\circ}$  and  $40^{\circ}$ . In both specimens of *Natalus tumidirostris* the bony palate terminates on each side at the plane of the postero-internal angle of the crown of the second molar. In the median line it is continued slightly further back along palatal face of vomer. The resulting form is strikingly different from that of the palate in other members of the genus. It is possible, however, that the palate is normal and that its peculiarity in the two specimens is the result of injury. As both skulls were cleaned by an experienced preparator there seems little probability that the palate was originally of the usual form.

*Teeth*.—The dentition is throughout heavier than in *N. stramineus*, and the form of the individual teeth differs in many important details. Canines and incisors as in *N. stramineus*. Relative size of upper premolars as in *N. stramineus*, that is the crown area decreasing regularly from third to first, the latter equal to about one-half former, but cusp of first slightly longer than that of second. In each tooth the transverse diameter is greater relatively to the longitudinal diameter than in the Mexican animal. Upper molars broader than in *N. stramineus*, the posterior commissure of protocone of first and second *distinctly marked by a rudimentary hypocone*. The lower premolars and molars differ from those of *N. stramineus* in greater breadth of crown, this character especially noticeable in the second and third premolars.

*Measurements*.—External measurements of type (♂) and paratype (♀): total length, ♂ 96, ♀ 94; tail, ♂ 47, ♀ 45; tibia, ♂ 18.4, ♀ 17.6; foot, ♂ 7, ♀ 8; forearm, ♂ 36, ♀ 35; thumb, ♂ 5, ♀ 4.8; second digit, ♂ 35, ♀ 35; third digit, ♂ 72, ♀ 69; fourth digit, ♂ 52, ♀ 50; fifth digit, ♂ 51, ♀ 49; ear from meatus, ♂ 15.4, ♀ 15.4; ear from crown ♂ 11.4, ♀ 12.

*Specimens examined*.—Two, both from the type locality.

*Remarks*.—This species requires no special comparison with other members of the genus, its tumid rostrum at once distinguishing it.

*Molossus pygmæus* sp. nov.

*Type* adult female (in alcohol) No. 102,104 United States National Museum, collected in an attic near Willemstad, Curaçao, West Indies, January 16, 1900.

*Characters*.—Considerably smaller than *Molossus obscurus*; color paler and molar teeth narrower than in the mainland animal.

*Color*.—Back broccoli-brown faintly washed with drab, the hairs whitish gray through basal half, this color appearing irregularly at surface. Belly drab-gray the hairs faintly whitish through basal half.

*Skull and teeth*.—Except for its smaller size the skull does not differ noticeably from that of mainland specimens. The crowns of the molar teeth are, however, relatively narrow. Rudimentary hypocone of first upper molar nearly obsolete.

*Measurements*.—External measurements of type: total length, 86 (98)\*; tail vertebrae, 34 (38); tibia, 11.8 (14); foot, 6.8 (7.8); forearm, 35 (39); thumb, 6 (6.4); second digit, 35 (40); third digit, 70 (78); fourth digit, 52 (60); fifth digit, 37 (42); ear from meatus, 10 (12); ear from crown, 8 (10); width from ear, 10 (14).

Cranial measurements of type: greatest length, 14.8 (16.4)\*; basal length, 13 (14.8); basilar length, 11 (13.6); lachrymal breadth, 4.8 (5.4); least interorbital breadth, 3 (4); zygomatic breadth, 9.6 (10.6); mastoid breadth, 9 (10); greatest breadth of braincase, 8 (9); depth of braincase, 5 (6); mandible, 10.4 (11.8); maxillary toothrow (exclusive of incisors), 5.6 (6); mandibular toothrow (exclusive of incisors), 6 (7).

*Specimens examined*.—One, the type.

*Remarks*.—*Molossus pygmæus* belongs to a group of species the numbers of which are even smaller than *M. obscurus* and its allies. The animal is probably confined to the island of Curaçao.

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\*Measurements in parenthesis are those of an adult female *Molossus obscurus* from La Guaira Venezuela.